REMARKS

By this Amendment, claims 40, 42 and 43 are cancelled, and claims 38, 44, 59, 64 and 65 are amended. Claims 38 and 59 are amended to incorporate features from allowable subject matter. Accordingly, claims 38, 39, 41 and 44-72 are pending in this application. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

I. Allowable Subject Matter

Applicants gratefully acknowledge that the Office Action indicates that claims 43 and 65 contain allowable subject matter. As such, Applicants amend claims 38 and 59 to recite the features of claims 43 and 65, respectively, and intervening claims, as well as to correct the dependency of claim 44. However, Applicants assert that the remaining claims 52-58 and 64 are also allowable for the reasons discussed below.

II. Claim Objections

The Office Action objects to claim 65 under 37 CFR §1.75(c) as being of improper dependent form. Accordingly, Applicants amend claims 59 and 65 to obviate the objection. Claim 59 incorporates the features from claim 65 and the proper intervening claim 64.

The Office Action further objects to claim 43 due to punctuation informalities. Accordingly, Applicants cancel claim 43 and amend claim 38 t that subject matter to obviate the objection.

III. Anticipatory Rejection under 35 U.S.C. §102

The Office Action rejects claims 38-41, 44-63 and 66-72 as being allegedly anticipated under 35 U.S.C. §102(a) over "Modeling and Analysis of Complex, Dynamic Real-time Systems", by B. Ravindran and L. R. Welch, The University of Texas at Arlington, AAT 9904954, pp. i-xviii, 1-241 (hereinafter "Ravindran"). This rejection is rendered moot for claims 38-41, 41-51, 59-63 and 66-72 by the incorporation of allowable subject matter into claims 38 and 59 and is respectfully traversed for the remaining claims 52-58.

A. Claim Language: Applicants' claims are directed generally, for example, to a method for distributing application, system and network specification information to a resource allocation function. An N-plurality of hosts is controlled by the resource allocation function in a distributed environment. Each host instantiates up to M managed characteristic applications. The resource allocation function communicates with an application control function.

For example, Applicants' independent method claim 52 recites the steps "providing instrumentation information to an N-plurality of quality-of-service (QoS) managers of the resource allocation function, the instrumentation information being associated with the N-plurality of hosts, the QoS managers being associated with the N-plurality of hosts; preparing system specification files to describe system and network specification information; linking the system specification files to the characteristic applications; producing QoS information by the resource allocation function based on the instrumentation information, the QoS information being associated with the characteristic applications on the N-plurality of hosts; analyzing the instrumentation information and the system specification files by a resource manager of the resource allocation function; allocating assigned hosts for processing the characteristic applications as control orders by the resource manager based on the QoS information, the assigned hosts being among the N-plurality of hosts; and compiling commands for the respective characteristic applications by the application control function to the assigned hosts based on the control orders and the QoS information." Applicants respectfully submit that Ravindran does not describe or suggest these method processes.

Specifically, the network (100) connects hosts A-N with a management system (RM) for executing up to M characteristic applications or programs. The resource allocation function (FG4) includes a hardware broker (50 / FG40) for analyzing load, a resource manager (60 / FG42) and QoS managers (30 / FG44). A system specification library (FG34) having access to system specification files (FG32) links with the applications. See *e.g.*, Figs. 1A and 2A. The application control function (FG5) includes control displays (80 / FG54) and a program controller (70 / FG50) connected to the resource manager. Instrumentation (FG2) provides collectors (10 / FG24), correlators (20 / FG26) and a QoS monitor (FG29) to provide information to the QoS managers for analysis. History servers (40 / FG12) in a monitoring function (FG1) provide performance metrics of the hosts to the hardware broker. See *e.g.*, Figs. 1A and 2B.

B. Ravindran Teachings: Instead, Ravindran discloses a middleware architecture that includes a resource manager, a program control and a system data broker. In response to notification by startup daemons, the program control alerts the resource manager of process failures. The resource manager enables relocation and restarting of programs due to resource overload or failure by notifying the startup daemons. Hardware monitors provide host-level and higher-level metrics for the resource manager. Software monitors represent path managers to convert program event tags into QoS metrics for identifying QoS violations and notifying the resource manager. See, *e.g.*, §5.1 (pp. 76-79) of Ravindran.

Also, Ravindran teaches grammar protocol for the software specification. Specifically, Ravindran provides for path and QoS definitions. The path definition includes connectivity, path attributes, QoS requirements, scalability and stream properties. The connectivity along the path represents flow of data and events between applications and devices. Attributes include type, priority and importance of the path. Path QoS requirements represent real-time characteristics, such as timing constraints, maximum latency of the path and throughput. See, *e.g.*, §§7.3 and 7.4 (pp. 89-96) of Ravindran.

However, there appears to be no teaching or suggestion in Ravindran for QoS managers to produce QoS information based on instrumentation information associated with program parameters. Rather, Ravindran produces QoS metrics using path manager software (p. 78), with the path containing QoS definitions (p. 93). In addition, Ravindran appears to lack any teaching or suggestion for the resource manager analyzing the instrumentation and system specification files, but instead serves as a repository of diagnostic information from the hardware and software monitors and a trigger for selected events (pp. 78-79, 81, 94).

C. Contrast: Ravindran does not appear to teach or suggest providing instrumentation information to QoS managers of the resource allocation function, the QoS managers associated with the hosts; producing QoS information by the QoS managers based on the instrumentation information, the QoS information being associated with the characteristic applications on the hosts; and analyzing the instrumentation information and the system specification files by a resource manager of the resource allocation function, as provided in Applicants' features in independent claim 52. These arguments also apply to claims 53-58 based on their dependence from claim 52.

Additionally, Ravindran does not appear to teach or suggest the hardware broker receiving respective operational statuses of the hosts from history servers and assigning fitness scores associated with the operational statuses to thereby determine the loads for the resource manager as provided in claim 56. Further, Ravindran does not appear to teach or suggest assigning fitness scores by a hardware broker based on operational statuses to a hardware broker from history servers to determine loads as provided in claim 58. Instead, Ravindran teaches a hardware broker program as a repository of unprocessed hardware performance information submitted to a hardware analyzer (p. 78 lines 12-14). For at least these reasons, Applicants respectfully assert that claims 52-58 are patentable over the applied reference and respectfully request that the rejection under 35 U.S.C. §102 be withdrawn.

IV. Obviousness Rejections under 35 U.S.C. §103

The Office Action rejects claims 42 and 64 as being allegedly obvious under 35 U.S.C. §103(a) over Ravindran in view of T. DeWitt *et al.*, "ReMoS: A Resource Monitoring System for Network-Aware Applications", Carnegie Mellon University, Tech. Report CMU-CS-97-194, 1997, pp. 1-30 (hereinafter "DeWitt"). See http://citeseer.ist.psu.edu/cache/papers/cs/6635/http:zSzzSzwww.cs.cmu.eduzSz~jasszSzpaperszSzcmu-cs-97-194.pdf/dewitt97remos.pdf. These rejections are rendered moot by the cancellation of claim 42 and the amendment of claim 64 to depend from claim 52, whose patentability is argued *supra*.

For at least these reasons, Applicants respectfully assert that dependent claim 64 is patentable over the applied references. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejection under 35 U.S.C. §103 be withdrawn.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Applicants : Paul V. Werme *et al.* Attorney Docket No.: Navy Case 83019
Serial No. : 09/864,829
Filed : May 24, 2001
Page : 14 of 14

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

Gerhard W. Thielman
Registration No. 43,186

Date: September 19, 2006

DEPARTMENT OF THE NAVY
Naval Surface Warfare Center – Dahlgren Division
Office of Counsel – Code XDC1
17320 Dahlgren Road
Dahlgren, Virginia 22448-5100
Telephone: (540) 653-8061 Customer No. 23501

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 50-0967